

ZOID

ANTI-JAM ANTI-SPOOF
INTEGRATED CRPA GNSS

Nav
Rakshak

4



Nav Rakshak - 4

ANTI-JAM ANTI-SPOOF INTEGRATED CRPA GNSS

Designed specifically for unmanned vehicles (UXVs) operating in contested electronic warfare environments.

Uses advanced digital signal processing, and a state-of-the-art 4 Element CRPA to eliminate GNSS interference. The CRPA RF Backend is tightly integrated with a military-grade multi-constellation GNSS receiver, equipped with advanced anti-spoofing algorithms.



< 300g W
Ultra - Low Swap

> 100 dB J/S
Proven Anti-Jam

> 50% IC
No Chinese content

Plug & Play
Integrable w/ all UAVs

Battle Tested Solution

Wideband FMCW-AWGN Barrage Jammers

Narrowband Continuous Wave (CW) Jammers

Pulsed WB Radio Frequency Noise Jammer

Swept spectrum Narrowband Jammer

GNSS spoofing & deception threats

Type of Jammer	ERP of Single WB Jammer	NR - 4 Safe Distance (>100db J/S)	Competition Safe Distance (>80db J/S)
Portable	< 30 W	> 120 m	> 1.2 Km
Tactical	< 500 W	> 500 m	> 5 Km
Military	< 2 kW	> 1000 m	> 10 Km

Note: A 20 dB improvement equals ~10× better safety distance.



Key Features

PROTECTION FROM 3 DIRECTIONS

Protection against multiple jammers from up to 3 different directions using 4-Element CRPA.

ULTRA-LOW SWAP

CRPA Antenna + RF Backend + GNSS Receiver integrated in a single module weighing <300g

HIGH ANTI-JAM PERFORMANCE

Proven anti-jam performance of >100dB Jammer/Signal Ratio against real EW Equipment.

ADAPTIVE NULL STEERING

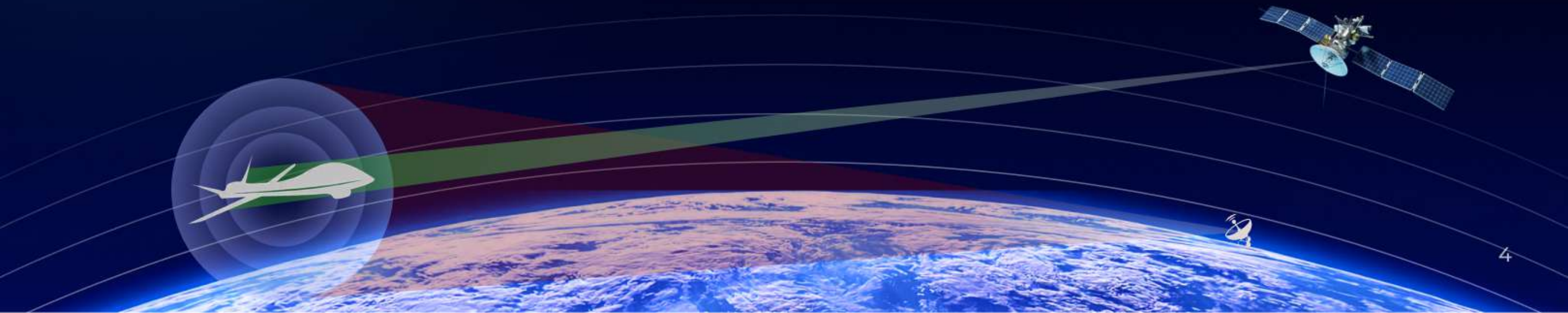
Adaptive null steering to dynamically optimize reception and suppress hostile interference

ADVANCED DIGITAL SIGNAL PROCESSING

Additional digital anti-jamming features like adaptive notch filtering and pulse blanking.

PLUG AND PLAY (PX4 & APM)

Seamless integration into new or legacy platforms with a wide range of messaging format support.



Module Specifications

Parameter	Specification
Dimension	100 x 100 x 50 mm
Weight	< 300 g
Antenna Array	4-Element CRPA Array
Simultaneous Independent Nulling	3 (Protection from 3 directions)
Supported GNSS Constellations	GPS + GALILEO + BEIDOU + GLONASS + IRNSS Frequency bands are CLASSIFIED
Anti-Jam Performance	>100 dB J/S against a single WB GNSS Jammer
Anti-Spoofing Performance	- Multi-constellation cross-verification & Continuous RF monitoring - Supports OSNMA for cryptographic signal authentication.

Parameter	Specification
Interfacing Connectors	Power via J30J Signal via GHR-06V-S
GNSS Data Protocols (5V TTL UART Interface @ 1W Power Consumption Via GHR-06V-S)	DroneCAN interface (compatible with APM and PX4) RTCM v2.x, v3.x (For RTK Corrections via AutoPilot)
Powering	9-18V @ 12W (5V @ 1W via TTL UART)
Standalone Position Accuracy	1.2m (Horizontal) 1.9m (Vertical)
RTK Position Accuracy	0.6cm+0.5ppm (Horizontal) 1 cm + 1 ppm (Vertical)
Maximum Update Rate	100 Hz
Environmental	- MIL-STD 810H (Vibration & Jerks) - IP66 & Operating Humidity <95% RH - Operating Temp. -40° C to +85° C

ZOID

TECHNOLOGIES

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